Comparative growth performance of camel calves kept under station and farmers' conditions

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Key words

Camel - Young animal - Livestock management - Weight gain - Pakistan.

Summary

A six-month study was undertaken on 14 camel calves aged 7 days to observe their growth performance. Five calves belonged to the Barani Production Research Institute (BLPRI), Pakistan, while the farmers living near BLPRI owned the rest. The monthly growth rate of Institute calves was determined by actual weighing and estimated by a standard formula based on body measurements. On the farmers' premises, the growth rate of calves was estimated by using the formula method only. Institute calves on average attained a net weight gain of 135.45 ± 6.35 kg, while farmers' calves gained 149.20 ± 3.06 kg. In general, the daily growth rate of camel calves was 0.79 kg. Most probably, the somewhat better gain by farmers' calves could be due to personal attention given to them by their owners. The present study findings are indicative of the great potential camel calves represent, which can be further exploited under optimum feeding and management conditions to alleviate animal protein deficiency prevailing in overpopulated and underdeveloped countries like Pakistan.

■ INTRODUCTION

Several studies conducted under various conditions have indicated the potential of rapid growth rate during the early months of camel life (2, 3, 6). Efficient daily weight gain in the young animal is governed by the individual's genetic make up, but needs to be developed by adequate feeding and proper management. The present study was planned to compare the efficiency of body weight gains in camel calves raised by private owners with those raised under the management of Barani Livestock Production Research Institute (BLPRI), Kherimurat, District Attock, Punjab, Pakistan.

■ MATERIALS AND METHODS

Fourteen camel calves aged 7 days at the beginning of the experiment were used for six months to study their growth rate. Private farmers owned nine of them and the remaining five belonged to BLPRI. At BLPRI calf weight was determined monthly (in the first week of each month) using a weighbridge. Body weight of calves was also estimated from body measurements according to a formula given in May and Baker's guide as cited by Pirzada *et al.* (7).

Body weight (kg) = SH x GS x GH x 50
where SH is the shoulder height (m)
GS is the girth of the shoulder (m)
GH is the girth around the hump (m)

The weight of farmers' calves was determined only from body measurements. All calves sucked milk from their respective dams *ad libitum*. They started nibbling almost at four weeks of age.

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Vegetation for browsing/grazing mainly comprised Pholai (*Acacia modesta*), Kandair (*Alhaji camelorum*) and Kao (*Olea ferruginea*). The calves were kept on milk plus available browsing during the day with their herd mates. Common salt bricks were provided *ad libitum*. Water was also provided *ad libitum* once a day.

■ RESULTS AND DISCUSSION

The daily growth rates of camel calves at the Institute and on farmers' premises were 0.75 and 0.82 kg, respectively. In general, the average monthly growth rate of experimental calves was 23.62 kg with a range from 21.60 to 25.90 kg, while the same calculated on a daily basis varied from 0.72 to 0.86 kg during different months with an average of 0.79 kg (table I).

No consistent growth pattern appeared in Institute calves or in farmers'. A significant decline in the growth rate during the second month could be attributed to increased feed requirements coupled with restricted milk feeding. A downward trend in the growth rate was reversed during the third month in Institute calves, whereas a further decline was observed in farmers' calves. A visible recovery in the growth rate was noticed in calves of both categories during the fourth month of the study. It was, of course, more pronounced in Institute calves than in farmers'. The enhanced growth rate during the fourth month seemed to be due to the abundant supply of lush vegetation used by calves.

The fifth and sixth months of the study were very warm, and, therefore, not favorable to an efficient growth rate. Instead, a gradual decline took place during both months. High summer temperatures during these months not only adversely affected the milk yield of dams but also resulted in a reduced feed intake by calves with, ultimately, a lowered growth rate.

In the case of Institute calves, the growth rate recorded monthly by direct weighing and that obtained from body measurements were close. The overall monthly gains in Institute and farmers' calves were 22.37 and 24.87 kg, respectively (table I). The most probable reason for a somewhat better gain by farmers' calves could be the personal attention given to them by their owners. The birth weight of camel calves doubled in their second month of life. This finding matches that of Ismail (6), who reported that birth weight of Saudi camel calves (both male and female) doubled in 64 days. Chapman (1) reported that on average birth weight of Bactrian calves doubled at the age of 2.5 months. On average, Institute calves attained a net weight gain of 135.45 ± 6.35 kg, while farmers' calves gained 149.20 ± 3.06 kg during the six-month study period. Degen *et al.* (2) reported that the calves averaged 155 kg at 180 days and the average daily gain to that age was 0.68 kg. El-Badawi (4) also reported similar results (150 to 175 kg live weight at six months of age).

■ CONCLUSION

The present study findings are indicative of the great potential possessed by camel calves which can further be exploited under optimum feeding and management conditions to alleviate animal protein deficiency prevailing in overpopulated and underdeveloped countries like Pakistan.

Acknowledgments

The authors are grateful to ACSAD (Syria) for financial assistance and the Directorate of Barani Livestock Production Research Institute (BLPRI), Kherimurat (Punjab-Pakistan), for providing other experimental facilities including the camel calves.

Table I

Comparative growth rate of camel calves raised at the Institute and on farmers' premises

Months	Station (kg/month)	Farmer (kg/month)	Gain (kg/day)	Overall (kg/month)
1	20.25 ± 1.91 (20.04 ± 1.75)	28.18 ± 1.546	0.80	24.21
2	18.85 ± 2.60 (21.9 ± 0.73)	24.29 ± 0.94	0.72	21.6
3	21.9 ± 0.73 (23.78 ± 1.16)	23.09 ± 1.17	0.75	22.5
4	26.04 ± 1.15 (22.23 ± 1.63)	25.77 ± 0.55	0.86	25.90
5	24.7 ± 2.23 (25.05 ± 1.89)	24.76 ± 1.11	0.82	24.73
6	22.45 ± 0.78 (20.82 ± 1.89)	23.11 ± 0.99	0.76	22.78
Overall	22.37 (22.30)	24.87 ± 0.49	0.79	23.62

* Figures in parentheses are the actual weights of calves

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Résumé

Iqbal A., Gill R.A., Khan B.B., Younas M., Jasra A.W. Comparaison des performances de croissance du chamelon en station de recherche et en élevage traditionnel

Une étude de six mois a été effectuée pour observer les performances de croissance de 14 chamelons dès leur 7e jour. Cinq chamelons appartenaient à l'Institut de recherches de Barani (Blpri), Pakistan, tandis que les autres appartenaient à des éleveurs habitant aux alentours du Blpri. Le taux de croissance mensuel des chamelons de la station a été déterminé par pesée et estimé par une formule standard basée sur des mesures barymétriques. Chez les éleveurs, le taux de croissance a été estimé à partir des seules mesures barymétriques. Le gain de poids a été en moyenne de 135,45 ± 6,35 kg en station et a atteint 149,20 ± 3,06 kg en élevage traditionnel. En général, le gain de poids quotidien des chamelons a été de 0,79 kg. Les meilleures performances chez les éleveurs étaient probablement liées à l'attention particulière donnée à chacun d'eux. Ces résultats indiquent le potentiel important des chamelons qui peut être ultérieurement exploité dans des conditions optimales d'alimentation et de gestion pour éviter les déficits protéiques prévalents dans les pays sous-développés et surpeuplés tels que le Pakistan.

Mots-clés : Chameau - Jeune animal - Conduite d'élevage - Gain de poids - Pakistan.

Resumen

Iqbal A., Gill R.A., Khan B.B., Younas M., Jasra A.W. Rendimiento comparativo en el crecimiento de camellos jóvenes mantenidos bajo condiciones de estación y de finca

Durante 6 meses se llevó a cabo un estudio con 14 camellos de 7 días de edad, esto con el fin de observar el rendimiento en el crecimiento. Cinco de los animales pertenecían al Instituto de Investigación de Producción de Barani (BLPRI), Pakistán, mientras que los otros pertenecían a fincas vecinas del BLPRI. La tasa de crecimiento mensual de los animales del Instituto se determinó mediante peso actual y se estimó mediante una formula estándar basada en medidas corporales. En las fincas, la tasa de crecimiento de los animales de los finqueros fue estimada únicamente mediante el método de la fórmula. Los animales del Instituto alcanzaron, en promedio una ganancia de peso neto de 135,45 ± 6,35 kg, mientras que los animales de los finqueros ganaron 149,20 ± 3,06 kg. En general, la tasa de crecimiento diaria de los camellos jóvenes fue de 0,79 kg. Probablemente, la ganancia mejorada en los animales de los finqueros pueda deberse a la atención personal dada a los animales por sus dueños. Los hallazgos del presente estudio indican el gran potencial que poseen los camellos jóvenes, el cual puede ser explotado aun más bajo condiciones de alimentación y de manejo óptimos, para aliviar la deficiencia en proteína animal prevaleciente en países sobre poblados y subdesarrollados, como Pakistán.

Palabras clave: Camello - Animal joven - Manejo del ganado - Ganancia de peso - Pakistan.